Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) An integrated metal processing facility for forming and heat treating metal castings, comprising:

a pouring station for pouring a molten metal into a series of molds to form the castings;

a heat treatment unit including at least one heat treatment station for heat treating the castings;

a transfer system for moving the castings from said pouring station to said heat treatment unit, and

a heat source positioned along a path of travel for the castings for applying heat to the castings prior to introduction of the castings into said heat treatment station to maintain the castings at or above a process control temperature for the metal of the castings;

whereby as the castings are moved from said pouring station to said heat treatment unit, the molten metal of the castings is permitted to solidify while the castings are maintained at or above their process control temperature until the castings are introduced into said heat treatment station.

2. (original) The integrated metal processing facility of claim 1 and wherein said transfer system comprises a robotic or mechanized arm adapted to grip and move the molds with the castings therewithin from the pouring station to said heat treatment station.

3. (original) The integrated metal processing facility of claim 1 and wherein said heating source comprises a heating element mounted to said transfer system for applying heat to the castings during transfer from said pouring station to said heat treatment line.

4. (original) The integrated metal processing facility of claim 1 and further comprising a process temperature control chamber positioned adjacent an inlet end of said heat treatment station.

5. (original) The integrated metal processing facility of claim 4 and wherein process temperature control station comprises a radiant chamber through which the castings are moved and wherein said heat source comprises a series of heating elements mounted along said process temperature control station for supplying heat to said radiant chamber.

6. (original) The integrated metal processing facility of claim 5 and wherein said heating elements comprise radiant heaters.

7. (original) The integrated metal processing facility of claim 5 and wherein said heating elements comprise convection heaters.

8. (original) The integrated metal processing facility of claim 5 and wherein said heating elements comprises a series of burners connected to a fuel supply.

9. (original) The integrated metal processing facility of claim 1 and wherein said heat treatment line comprises a furnace having a plurality of furnace chambers each defining a heat treatment station.

10. (original) The integrated metal processing facility of claim 1 and wherein said heat treatment line further includes a process temperature control station comprising an elongated chamber through which the castings are received prior to their introduction into said heat treatment station, and a plurality of heat sources supplying heat to said chamber to create a heated environment therein, in which cooling of the castings is arrested and the castings are maintained at or above the process control temperature therefore.

11 – 22 (canceled)

23. (currently amended) A system for processing castings formed from a molten metal, comprising:

a pouring station in which the molten metal is poured into a series of molds to form the castings; and

a heat treatment line downstream from said pouring station and including:

at least one heat treatment furnace through which the castings are passed for heat treatment thereof; and

a process temperature control station positioned upstream from said heat treatment furnace and having a chamber through which the castings are passed prior to heat treatment, and a series of heating elements for applying heat to the castings

within said chamber sufficient to ~~arrest~~ enable solidification of the castings while arresting cooling of the castings to a temperature at or above a process control temperature for the metal castings.

24. (original) The system of claim 23 and further comprising a transfer mechanism for transferring the castings from said pouring station to said heat treatment line.

25. (original) The system of claim 23 and wherein said heating elements comprise radiant heaters.

26. (original) The system of claim 23 and wherein said heating elements comprise convection heaters.

27. (original) The system of claim 23 and wherein said heating elements comprises a series of burners connected to a fuel supply.

28. (original) The system of claim 23 and wherein said chamber comprises an elongated tunnel having a ceiling and side walls including a radiant material for directing heat toward the castings as the castings are passed therethrough.

29. (original) The system of claim 24 and further comprising a heat source mounted to said transfer mechanism and adapted to applying heat to the castings during transport of the castings from said pouring station to said heat treatment line.

30. (original) The system of claim 23 and wherein said heat treatment line comprises a furnace having a plurality of furnace chambers each defining a heat treatment station.

31. (original) The system of claim 23 and further including a collection tray for receiving the castings from the pouring station and reciprocally moveable into and out of said process temperature control station as successive castings are placed therein.